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Title: Auer rod formation in mature eosinophils is an extremely rare manifestation of myelodysplasia

Short Title: Mature eosinophil with Auer rod in myelodysplasia
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Text:

A 50-year-old woman was discovered to have incidental mild leukocytopenia and thrombocytopenia. Rare blasts and dysplastic neutrophils were seen on peripheral blood smear. A bone marrow examination revealed dysplastic granulocytes and megakaryocytes with 1% blasts. Cytogenetic testing demonstrated a complex karyotype including del(5q). A diagnosis of refractory cytopenia with multilineage dysplasia was rendered (2008 WHO). Her bone marrow blast count subsequently increased to 10% and she underwent an allogeneic peripheral blood stem cell transplant. She was doing well; however, one year post-transplant, a bone marrow biopsy again showed 10% blasts and dysplastic myeloid cells, including rare dysplastic eosinophils with Auer rod-like bodies, consistent with recurrent high grade myeloid malignancy.

Auer rods are eosinophilic rod-like bodies formed by abnormal fusion of azurophilic (primary) granules in myeloid blasts and rarely mature neutrophils. Their presence indicates dysplastic myeloid differentiation. They are only rarely seen in the absence of a high grade myeloid neoplasm (e.g. myelodysplastic syndrome with excess blast-2, chronic myelomonocytic leukemia-2 or acute myeloid leukemia). Auer rods in mature eosinophils are exceptional. Regardless of the cell type harboring an Auer rod, their detection on blood smear review obligates further hematologic evaluation and consideration for hematologic malignancy.

Figure caption:

Dysplastic mature eosinophil. Mature eosinophil with nuclear hypersegmentation, abnormally-distributed granules, and Auer rod-like body formation.

